

**ENVIRONMENTAL SERVICES
SPB05-894P-G**

1. PARTIES

THIS CONTRACT, is entered into by and between the State of Montana, Department of Administration, State Procurement Bureau, (hereinafter referred to as "the State"), whose address and phone number are Room 165 Mitchell Building, 125 North Roberts, PO Box 200135, Helena MT 59620-0135, (406) 444-2575 and **CDM**, (hereinafter referred to as the "Contractor"), whose nine digit Federal ID Number, address and phone number are 04-2473650, 50 West 14th Street, Suite 200, Helena MT 59601, and (406) 441-1400.

THE PARTIES AGREE AS FOLLOWS:

2. PURPOSE

The purpose of this term contract is to establish a list of Environmental Service Providers in several service areas. All qualified offerors will be assembled into a multiple contractor term contract for use by state agencies and other public procurement units. The State makes no guarantee of use by any agency-authorized access to this term contract. However, through data conveyed by the Montana Department of Environmental Quality, Montana Department of Natural Resources and Conservation, and Montana Fish, Wildlife and Parks, it is anticipated that this term contract should access approximately 2.5 million dollars or more annually.

3. EFFECTIVE DATE, DURATION, AND RENEWAL

3.1 Contract Term. This contract shall take effect upon execution of all signatures, and terminate on June 30, 2006, unless terminated earlier in accordance with the terms of this contract. (Mont. Code Ann. § 18-4-313.)

3.2 Contract Renewal. This contract may, upon mutual agreement between the parties and according to the terms of the existing contract, be renewed in one-year intervals, or any interval that is advantageous to the State, for a period not to exceed a total of five additional years. This renewal is dependent upon legislative appropriations.

3.3 Addition of Analytical Laboratory Contractor. Proposals will be accepted between April 1 and May 1 of each calendar year from current firms requesting review of their qualifications to perform Analytical Laboratory Services as originally requested under RFP SPB05-894P. The state will evaluate each proposal received in the exact manner in which the original proposals for other categories were evaluated. If proposal passes the requirements as evaluated to perform Analytical Lab Services, the state will update that firms term contract to include the Analytical Lab Services category contingent on said firm being in good standing otherwise.

4. NON-EXCLUSIVE CONTRACT

The intent of this contract is to provide state agencies with an expedited means of procuring supplies and/or services. This contract is for the convenience of state agencies and is considered by the State Procurement Bureau to be a "Non-exclusive" use contract. Therefore, agencies may obtain this product/service from sources other than the contract holder(s) as long as they comply with Title 18, MCA, and their delegation agreement. The State Procurement Bureau does not guarantee any usage.

5. COOPERATIVE PURCHASING

Under Montana law, public procurement units, as defined in section 18-4-401, MCA, have the option of cooperatively purchasing with the State of Montana. Public procurement units are defined as local or state public procurement units of this or any other state, including an agency of the United States, or a tribal procurement unit. Unless the bidder/offeror objects, in writing, to the State Procurement Bureau prior to the

award of this contract, the prices, terms, and conditions of this contract will be offered to these public procurement units.

6. TERM CONTRACT REPORTING

Term contract holder(s) shall furnish annual reports of term contract usage. Each report shall contain complete information on all public procurement units utilizing this term contract. Minimum information required to be included in usage reports: name of the agency or governmental entity who contacted you regarding a potential project; project title; agency contact person; if the project was not successfully negotiated, state the reason; number and title of contracts received; total dollar amounts for contracts received; the names of your company personnel involved in the project; and project status as of usage report date. The report for this term contract will be due on July 20th of each year.

Reported volumes and dollar totals may be checked by the State Procurement Bureau against State records for verification. Failure to provide timely or accurate reports is justification for cancellation of the contract and/or justification for removal from consideration for award of contracts by the State.

7. COST/PRICE ADJUSTMENTS

7.1 Cost Increase by Mutual Agreement. After the initial term of the contract, each renewal term may be subject to a cost increase by mutual agreement. Contractor must provide written, verifiable justification for any cost adjustments they request during each renewal period. Contractor shall provide its cost adjustments in both written and electronic format.

7.2 Differing Site Conditions. If, during the term of this contract, circumstances or conditions are materially different than set out in the specifications, the Contractor may be entitled to an equitable adjustment in the contract price. The Contractor shall immediately cease work and notify, in writing, the State of any such conditions necessitating an adjustment as soon as they are suspected and prior to the changed conditions affecting the performance of this contract. Any adjustment shall be agreed upon in writing by both parties to the contract.

7.3 Cost/Price Adjustment. All requests for cost/price adjustment must be submitted between April 1st and April 30th along with written justification. Requests received after April 30th will not be considered unless written approval from the SPB Contracts Officer is given to submit at a later date. In no event will cost/price adjustments be allowed beyond May 15th. All requests that are approved will be incorporated by contract amendment and made effective July 1st of the next approved renewal period.

8. SERVICES AND/OR SUPPLIES

8.1 Service Categories. Contractor agrees to provide to the State the following services:

Water Quality Monitoring – Fixed Station and Probabilistic Design. The statewide monitoring network has three components. The first component is the fixed station water quality-monitoring network. There are 38 fixed station sites located on streams throughout Montana where there are active USGS gauging stations. The USGS is currently contracted to collect all of the water chemistry samples. The State may also collect sediment samples for trace metal analyses. Remote sensing may be used to assess stream geomorphology, flood plain and watershed characteristics.

Water Quality Monitoring - Lakes and Streams. As part of the monitoring program, standards criteria and TMDL development, lakes will continue to be sampled collecting chemistry, physical, and habitat parameters. Stream sampling may include sediment and water chemistry, geomorphology, habitat, or sources of pollutants (e.g., pebble counts, channel cross-section, stream reach assessments, photo points, Rosgen Type II, etc GIS and remote sensing may be used to assess riparian habitats, and watershed physical characteristics.

Water Quality Monitoring - Reference Sites. As part of the monitoring program and standards criteria development, reference sites will continue to be identified and characterized as described above.

TMDL Targets. The TMDL program (within DEQ) will often need additional data in order to develop TMDL targets. Targets are quantitative water quality goals or “endpoints” that represent all the applicable narrative or numeric water quality standards. These targets, when achieved will represent full beneficial use support. This may require additional monitoring to determine reference condition when TMDL targets are based on narrative criteria or designated uses (water quality standards). Targets may be based on numeric water quality criteria, pollutant concentrations or loads, habitat or geomorphic measures, and/or biological criteria or populations. Targets are also used to determine the existing Water Quality Impairment Status (WQIS) of the streams on the 303(d) list. In most cases, the contractor will be required to write a report, which includes a recommendation and justification for one or more TMDL targets and also compare those targets to the existing conditions to determine WQIS. Communication with the State is crucial while deriving preliminary targets to ensure TMDL consistency across Montana.

TMDL Source Assessment/Delineation. The TMDL program (within DEQ) will often need additional data in order to link water quality impairments to their sources, or to allocate sources of pollutants. This may require data compilation, investigative monitoring and statistical analysis within a specified watershed, which can be used for source allocation, or the linkage of water quality impairments to causes and sources of impairment (e.g., sediment or land use practices). Quantitative source assessments may be conducted using field-based monitoring and/or interpretation and analysis of aerial photos, digital images, or GIS coverages depending upon impairment sources and available information. In most cases, contractors will be required to write a report that identifies what the major causes of impairment are and where the major sources of pollutants are located. DEQ will also need to have all pollution/pollutant sources quantified. The quantification of these loads will assist in both source load allocations and the total maximum daily loads. In addition, data collected during source assessments must be entered into an approved database structure or format and linkage to the National Hydrography Dataset (NHD) streams layer may be requested. The department may also request a cost/benefit analysis for implementing BMPs, which can be used for developing TMDL source allocations. Communication with the State is crucial while deriving assessing sources of pollutants to ensure TMDL consistency across Montana.

TMDL Load Allocations. The TMDL program (within DEQ) will often need additional data in order to develop load allocations in conjunction with the source assessment/delineation. Load allocations are the portion of a receiving water’s loading capacity that is attributed to existing or future point or non-point sources of pollution or to natural background sources. Load allocations are best estimates of the loading, which can range from reasonably accurate estimates to gross allotments. Allocation can be expressed as a percent reduction that results in a maximum allowable load or as performance-based, which demonstrates how BMPs will be applied and how they will reduce the current loads. Communication with the State is crucial while deriving preliminary load allocations to ensure TMDL consistency across Montana.

Stakeholder Participation. The TMDL program (within DEQ) will often need additional assistance in order to develop implementation/restoration strategies and monitoring plans. These plans often require public involvement with the local stakeholders. These efforts typically results in developing the measures needed to achieve full beneficial use support or to monitoring the uncertainties that arise during the TMDL process. Offerors should be experienced in or have staff members with proper credentials to facilitate participation with local stakeholders.

TMDL Effectiveness Monitoring. Effectiveness monitoring will be required to evaluate the success of implementing a TMDL plan. Monitoring will often include the collection of some combination of chemical, physical or biological data, which can be used to determine if water quality is improving over time. Most monitoring designs and techniques will be fairly straightforward and may only require visiting a site once per year. In most cases, the contractor will be required to write an annual report, which can be used to determine if water quality is improving.

8.2 Reuse of Documents. When the projects dictate a design or engineered approach, the State agrees that it will not apply the Contractor’s designs to any other projects.

9. ENGINEERING ACCESS

All of the firms selected may need to have access to engineering services depending on the nature of the project. The contractor(s) will be expected to use their own best judgment as to whether engineering services are needed for a given project. However, traditional engineering methodologies are not the emphasis of this RFP. It is a violation of State Statute to practice engineering or land surveying without a license.

10. PROJECT SELECTION

10.1 Project Identification. The State will be responsible for identifying projects, contacting landowners and securing necessary permission/cooperation agreements, selecting a contractor, writing grant applications and approving project payments.

10.2 Hazardous Materials. The State will not initiate projects where it is known that hazardous materials are present. If there is an indication of a potential of hazardous materials, then the State will do testing prior to contacting the contractor. However, there is always the possibility of unforeseen problems resulting in the stoppage of a project.

10.3 Meetings. The selected contractor may be required to meet with State personnel at the project site to conduct a site evaluation, discuss project issues and begin the negotiation process on project feasibility, conceptual design and costs for each project.

10.4 Approach Expectations. In the case of restoration activities, the agency will identify the preferred techniques. The determination made by the State may define which contractor(s) are contacted for project initiation. The State is always open to new and innovative approaches that accomplish project goals.

11. SELECTING A CONTRACTOR

The State may select a term contract holder from the Environmental Services contract home page as provided under the state's website address <http://www.discoveringmontana.com/doa/gsd/procurement/TermContracts/environservices/Default.asp>, taking into consideration such things as the contractor's area of expertise, requirements and location of the project, the contractor's availability and access to resources necessary to efficiently and effectively complete the project, demonstrated excellent past performance on State and public projects, identified subcontractors and total project cost.

General. Ordering agencies shall use the procedures in this section when ordering services priced at hourly rates as established by each Term Contract (TC). The applicable service categories are identified in each TC along with the contractor's price lists.

Request for Quotation (RFQ) procedures. The ordering agency must provide an RFQ, which includes the statement of work and limited, but specific evaluation criteria (e.g., experience and past performance), to TC contractors that offer services that will meet the agency's needs. The RFQ may be posted to the agency's state website to expedite responses.

Statement of Work (SOWs). All SOW's shall include at a minimum a detailed description of the work to be performed, location of work, period of performance, deliverable schedule, applicable performance standards and any special requirements (e.g., security clearances, travel, special knowledge).

- (1) Ordering agency may select a contractor from the appropriate service category and directly negotiate a mutually acceptable project based on a sudden and unexpected happening or unforeseen occurrence or condition, which requires immediate action. (Exigency).
- (2) Ordering agency may place orders at or below the \$5,000 threshold with any TC contractor that can meet the agency's needs. The ordering agency should attempt to distribute orders among all service category contractors.

(3) For orders estimated to exceed \$5,000 but less than \$25,000.

- (i) The ordering agency shall develop a statement of work.
- (ii) The ordering agency shall provide the RFQ (including the statement of work and evaluation criteria) to at least three TC contractors that offer services that will meet the agency's needs.
- (iii) The ordering agency shall request that contractors submit firm-fixed prices to perform the services identified in the statement of work.

(4) For orders estimated to exceed \$25,000. In addition to meeting the requirements of (3) above, the ordering agency shall:

- (i) Provide the RFQ (including the statement of work and the evaluation criteria) to a minimum of six service category TC contractors (if category has less than 6, all contractors will be offered an RFQ) with a 50% replacement factor for each subsequent request for quote in the same service category.

Evaluation. The ordering agency shall evaluate all responses received using the evaluation criteria provided in the RFQ to each TC contractor. The ordering agency is responsible for considering the level of effort and the mix of labor proposed to perform a specific task being ordered, and for determining that the total price is reasonable. The agency will place the order with the contractor that represents the best value. After award, ordering agencies will provide timely notification to unsuccessful TC contractors. If an unsuccessful TC contractor requests information on a task order award that was based on factors other than price alone, a brief explanation of the basis for the award decision shall be provided.

Minimum documentation. The ordering agency shall document:

- (1) The TC contractors considered, noting the contractor from which the service was purchased.
- (2) A description of the service purchased.
- (3) The amount paid.
- (4) The evaluation methodology used in selecting the contractor to receive the order.
- (5) The rationale for making the selection.
- (6) Determination of price fair and reasonableness.

Agency project task orders will be utilized to finalize the project. Only written addenda will be used for adjustments of the task orders and must be signed by both parties. All task orders must contain signatures from both parties and appropriate agency legal review as directed in their procurement policy.

The State will monitor contractor selection by using the information provided in the annual TC usage reports.

Contractor's who fail to respond to three RFQ opportunities within a one-year period between July 1st and June 30th may be removed from the qualified list of contractors.

12. CONTRACTOR RESPONSIBILITIES

12.1 Supervision and Implementation. The selected contractor for an individual project will be responsible for the supervision and implementation of the approach and will be responsible for oversight of work performed by all subcontractors. In most cases the contractor will provide and be responsible for all the necessary equipment, materials, supplies and personnel necessary for proper execution of the work. However, the State reserves the right to hire subcontractors (equipment and/or labor) if it will provide a cost savings to the State. The selected contractor will also be responsible for clean up of the sites if necessary and must have the sites inspected by the State immediately prior to completion.

12.2 On-Site Requirements. When a contractor is contacted by the State to discuss a project, the State and the contractor may visit the job site if deemed necessary by the Project Manager, to become familiar with conditions relating to the project and the labor requirements. The State will provide a detailed scope of work for the project and request the contractor supply the State with a response to project approach, cost, timeframe and any other information deemed necessary by the State to make a selection or complete a contract negotiation.

In the cases of Restoration or On-The-Ground Activities, the contractor shall adequately protect the work, adjacent property, and the public in all phases of the work. They shall be responsible for all damages or injury due to their action or neglect.

The contractor shall maintain access to all phases of the contract pending inspection by the State, the landowner, or their representative. All interim or final products funded by the contract will become the property of the State or Cooperative Purchaser upon payment for said products.

All work rejected as unsatisfactory shall be corrected prior to final inspection and acceptance. The contractor shall respond within seven calendar days after notice of observed defects has been given and shall proceed to immediately remedy these defects. Should the contractor fail to respond to the notice or not remedy the defects, the State may have the work corrected at the expense of the contractor.

12.3 Clean Up (when project tasks require). The contractor shall:

- Keep the premises free from debris and accumulation of waste;
- Clean up any oil or fuel spills;
- Keep machinery clean and free of weeds;
- Remove all construction equipment, tools and excess materials; and
- Perform finishing site preparation to limit the spread of noxious weeds before final payment by the State.

12.4 Applicable Laws. The contractor shall keep informed of, and shall comply with all applicable laws, ordinances, rules, regulations and orders of the City, County, State, Federal or public bodies having jurisdiction affecting any work to be done to provide the services required. The contractor shall provide all necessary safeguards for safety and protection, as set forth by the United States Department of Labor, Occupational Safety and Health Administration.

12.5 Cooperation. The contractor shall work closely with the States analytical consultants, (i.e. environmental laboratories and taxonomists) to develop the desired products.

12.6 Work Acceptance. The contractor is responsible for project oversight as needed. The State may also periodically provide personnel for administrative oversight from the initiation of the contract through project completion. All work will be inspected by the State or designated liaison prior to approval of any contract payments. All work rejected as unsatisfactory shall be corrected prior to final inspection and acceptance. Contractor shall respond within seven calendar days after notice of defects has been given by the State and proceed to immediately remedy all defects.

12.7 Records. The contractor will supply the State with documentation, when requested, of methods used throughout project implementation. Contractor will maintain records for themselves and all subcontractors of supplies, materials, equipment and labor hours expended.

12.8 Communication. Remoteness of project sites may necessitate that the contractor have some form of field communication such as a cellular phone. This communication is necessary to enable the State to respond to public concerns related to the project, accidents, inspections, or other project issues that require immediate feedback. In addition, the State or Cooperative Purchaser may require scheduled communication at agreed upon intervals. The communication schedule will be dependent upon the project circumstances and requirements of the contracting agency. In the case when a communication schedule is included in the Scope of Work, the schedule will commence when the contractor initiates the project.

12.9 Change Of Staffing. Since qualifications of personnel were key in determining which offerors were selected to be on this TC, a written notification of any changes in key personnel must be made to the state agency, prior to entering into negotiations to perform any specific work scope. Contractor shall replace such employee(s) at its own expense with an employee of substantially equal abilities and qualifications without additional cost to the agency. If these staffing changes cause the contractor to no longer meet the qualifications stated herein, that firm will be removed from the service area of this TC. Failure to notify the state

agency of staffing changes could result in the contractor being removed from the TC listing and possible suspension from bidding on other state projects.

12.10 Collaboration. The State encourages collaboration between contractors to increase the scope of services offered. In cases where the chosen contractor is not able to provide all services needed for the project, the State will expect the chosen contractor to contact other contractors on this list to negotiate subcontracts for these services before going elsewhere. Exceptions to this strategy will be evaluated on a case-by-case basis.

12.11 Subcontractors, Project Budget and Invoicing. All subcontractors to be used in any project must be approved by the authorized entity initiating the project. Project budgets will be negotiated for each individual project contract. However, all rates, terms and conditions set forth in this term contract will be applied to individual contracts. Subcontractor is defined as anyone other than the prime contractor having substantial direct involvement in a specific project.

The State reserves the right to choose the invoicing method from the following:

- Prime contractor's billing will include the subcontractors charges and payment will be made to the prime, or
- Prime and subcontractors will bill the State separately and the State will pay each directly.

13. CONSIDERATION/PAYMENT

13.1 Payment Schedule. In consideration for the services to be provided, the State shall pay according to the negotiated agreement for each project. Hourly rates and miscellaneous charges as provided in Attachment B shall apply.

13.2 Withholding of Payment. The State may withhold payments to the Contractor if the Contractor has not performed in accordance with this contract. Such withholding cannot be greater than the additional costs to the State caused by the lack of performance.

14. CONTRACTOR REGISTRATION

The Contractor will be registered with the Department of Labor and Industry under sections 39-9-201 and 39-9-204, MCA, *prior* to contract execution. The State cannot execute a contract for construction to a Contractor who is not registered. (Mont. Code Ann. § 39-9-401.)

Contractor Registration Number: 10346

15. CONTRACTOR WITHHOLDING

Section 15-50-206, MCA, requires the state agency or department for whom a public works construction contract over \$5,000 is being performed, to withhold 1 percent of all payments and to transmit such monies to the Department of Revenue.

16. MONTANA PREVAILING WAGE REQUIREMENTS

Unless superseded by federal law, Montana law requires that contractors and subcontractors give preference to the employment of Montana residents for any public works contract in excess of \$25,000 for construction or nonconstruction services in accordance with sections 18-2-401 through 18-2-432, MCA, and all administrative rules adopted pursuant thereto. Unless superseded by federal law, at least 50% of the workers of each contractor engaged in construction services must be performed by bona fide Montana residents. The Commissioner of the Montana Department of Labor and Industry has established the resident requirements in accordance with sections 18-2-403 and 18-2-409, MCA. Any and all questions concerning prevailing wage and Montana resident issues should be directed to the Montana Department of Labor and Industry.

In addition, unless superseded by federal law, all employees working on a public works contract shall be paid prevailing wage rates in accordance with sections 18-2-401 through 18-2-432, MCA, and all administrative rules adopted pursuant thereto. Montana law requires that all public works contracts, as defined in section 18-2-401, MCA, in which the total cost of the contract is in excess of \$25,000, contain a provision stating for each job classification the standard prevailing wage rate, including fringe benefits, travel, per diem, and zone pay that the contractors, subcontractors, and employers shall pay during the public works contract.

Furthermore, section 18-2-406, MCA, requires that all contractors, subcontractors, and employers who are performing work or providing services under a public works contract post in a prominent and accessible site on the project staging area or work area, no later than the first day of work and continuing for the entire duration of the contract, a legible statement of all wages and fringe benefits to be paid to the employees in compliance with section 18-2-423, MCA. Section 18-2-423, MCA, requires that employees receiving an hourly wage must be paid on a weekly basis.

Each contractor, subcontractor, and employer must maintain payroll records in a manner readily capable of being certified for submission under section 18-2-423, MCA, for not less than three years after the contractor's, subcontractor's, or employer's completion of work on the public works contract.

The nature of the work performed or services provided under this contract meets the statutory definition of a "public works contract" under section 18-2-401(11)(a), MCA, and falls under the category of Heavy Construction and Nonconstruction services. The booklets containing Montana's 2003 Rates for Heavy Construction and Nonconstruction Services are attached.

The most current Montana Prevailing Wage Booklet will automatically be incorporated at time of renewal. It is the contractor's responsibility to ensure they are using the most current prevailing wages during performance of its covered work.

17. ACCESS AND RETENTION OF RECORDS

17.1 Access to Records. The Contractor agrees to provide the State, Legislative Auditor or their authorized agents access to any records necessary to determine contract compliance. (Mont. Code Ann. § 18-1-118.)

17.2 Retention Period. The Contractor agrees to create and retain records supporting the environmental services for a period of three years after either the completion date of this contract or the conclusion of any claim, litigation or exception relating to this contract taken by the State of Montana or a third party.

18. ASSIGNMENT, TRANSFER AND SUBCONTRACTING

The Contractor shall not assign, transfer or subcontract any portion of this contract without the express written consent of the State. (Mont. Code Ann. § 18-4-141.) The Contractor shall be responsible to the State for the acts and omissions of all subcontractors or agents and of persons directly or indirectly employed by such subcontractors, and for the acts and omissions of persons employed directly by the Contractor. No contractual relationships exist between any subcontractor and the State.

19. HOLD HARMLESS/INDEMNIFICATION

The Contractor agrees to protect, defend, and save the State, its elected and appointed officials, agents, and employees, while acting within the scope of their duties as such, harmless from and against all claims, demands, causes of action of any kind or character, including the cost of defense thereof, arising in favor of the Contractor's employees or third parties on account of bodily or personal injuries, death, or damage to property arising out of services performed or omissions of services or in any way resulting from the acts or omissions of the Contractor and/or its agents, employees, representatives, assigns, subcontractors, except the sole negligence of the State, under this agreement.

20. REQUIRED INSURANCE

20.1 General Requirements. The Contractor shall maintain for the duration of the contract, at its cost and expense, insurance against claims for injuries to persons or damages to property, including contractual liability, which may arise from or in connection with the performance of the work by the Contractor, agents, employees, representatives, assigns, or subcontractors. This insurance shall cover such claims as may be caused by any negligent act or omission.

20.2 Primary Insurance. The Contractor's insurance coverage shall be primary insurance as respect to the State, its officers, officials, employees, and volunteers and shall apply separately to each project or location. Any insurance or self-insurance maintained by the State, its officers, officials, employees or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

20.3 Specific Requirements for Commercial General Liability. The Contractor shall purchase and maintain occurrence coverage with combined single limits for bodily injury, personal injury, and property damage of \$1,000,000 per occurrence and \$2,000,000 aggregate per year to cover such claims as may be caused by any act, omission, or negligence of the Contractor or its officers, agents, representatives, assigns or subcontractors.

20.4 Additional Insured Status. The State, its officers, officials, employees, and volunteers are to be covered and listed as additional insureds; for liability arising out of activities performed by or on behalf of the Contractor, including the insured's general supervision of the Contractor; products and completed operations; premises owned, leased, occupied, or used.

20.5 Specific Requirements for Automobile Liability. The Contractor shall purchase and maintain coverage with split limits of \$500,000 per person (personal injury), \$1,000,000 per accident occurrence (personal injury), and \$100,000 per accident occurrence (property damage), OR combined single limits of \$1,000,000 per occurrence to cover such claims as may be caused by any act, omission, or negligence of the contractor or its officers, agents, representatives, assigns or subcontractors.

20.6 Additional Insured Status. The State, its officers, officials, employees, and volunteers are to be covered and listed as additional insureds for automobiles leased, hired, or borrowed by the Contractor.

20.7 Specific Requirements for Professional Liability. The Contractor shall purchase and maintain occurrence coverage with combined single limits for each wrongful act of \$1,000,000 per occurrence and \$2,000,000 aggregate per year to cover such claims as may be caused by any act, omission, negligence of the Contractor or its officers, agents, representatives, assigns or subcontractors. Note: if "occurrence" coverage is unavailable or cost prohibitive, the Contractor may provide "claims made" coverage provided the following conditions are met: (1) the commencement date of the contract must not fall outside the effective date of insurance coverage and it will be the retroactive date for insurance coverage in future years; and (2) the claims made policy must have a three year tail for claims that are made (filed) after the cancellation or expiration date of the policy.

20.8 Deductibles and Self-Insured Retentions. Any deductible or self-insured retention must be declared to and approved by the state agency. At the request of the agency either: (1) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the State, its officers, officials, employees, or volunteers; or (2) at the expense of the Contractor, the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claims administration, and defense expenses.

20.9 Certificate of Insurance/Endorsements. A certificate of insurance from an insurer with a Best's rating of no less than A- indicating compliance with the required coverages, has been received by the State Procurement Bureau, PO Box 200135, Helena MT 59620-0135. The Contractor must notify the State immediately, of any material change in insurance coverage, such as changes in limits, coverages, change in status of policy, etc. The State reserves the right to require complete copies of insurance policies at all times.

21. COMPLIANCE WITH THE WORKERS' COMPENSATION ACT

Contractors are required to comply with the provisions of the Montana Workers' Compensation Act while performing work for the State of Montana in accordance with sections 39-71-120, 39-71-401, and 39-71-405, MCA. Proof of compliance must be in the form of workers' compensation insurance, an independent contractor's exemption, or documentation of corporate officer status. Neither the contractor nor its employees are employees of the State. This insurance/exemption must be valid for the entire term of the contract. A renewal document must be sent to the State Procurement Bureau, PO Box 200135, Helena MT 59620-0135, upon expiration.

22. COMPLIANCE WITH LAWS

The Contractor must, in performance of work under this contract, fully comply with all applicable federal, state, or local laws, rules and regulations, including the Montana Human Rights Act, the Civil Rights Act of 1964, the Age Discrimination Act of 1975, the Americans with Disabilities Act of 1990, and Section 504 of the Rehabilitation Act of 1973. Any subletting or subcontracting by the Contractor subjects subcontractors to the same provision. In accordance with section 49-3-207, MCA, the Contractor agrees that the hiring of persons to perform the contract will be made on the basis of merit and qualifications and there will be no discrimination based upon race, color, religion, creed, political ideas, sex, age, marital status, physical or mental disability, or national origin by the persons performing the contract.

23. INTELLECTUAL PROPERTY

All patent and other legal rights in or to inventions created in whole or in part under this contract must be available to the State for royalty-free and nonexclusive licensing. Both parties shall have a royalty-free, nonexclusive, and irrevocable right to reproduce, publish or otherwise use and authorize others to use, copyrightable property created under this contract.

24. PATENT AND COPYRIGHT PROTECTION

24.1 Third Party Claim. In the event of any claim by any third party against the State that the products furnished under this contract infringe upon or violate any patent or copyright, the State shall promptly notify Contractor. Contractor shall defend such claim, in the State's name or its own name, as appropriate, but at Contractor's expense. Contractor will indemnify the State against all costs, damages and attorney's fees that accrue as a result of such claim. If the State reasonably concludes that its interests are not being properly protected, or if principles of governmental or public law are involved, it may enter any action.

24.2 Product Subject of Claim. If any product furnished is likely to or does become the subject of a claim of infringement of a patent or copyright, then Contractor may, at its option, procure for the State the right to continue using the alleged infringing product, or modify the product so that it becomes non-infringing. If none of the above options can be accomplished, or if the use of such product by the State shall be prevented by injunction, the State will determine if the Contract has been breached.

25. CONTRACT TERMINATION

25.1 Termination for Cause. The State may, by written notice to the Contractor, terminate this contract in whole or in part at any time the Contractor fails to perform this contract.

25.2 Reduction of Funding. The State, at its sole discretion, may terminate or reduce the scope of this contract if available funding is reduced for any reason. (See Mont. Code Ann. § 18-4-313(3).)

26. STATE PERSONNEL

26.1 State Contract Manager. The State Contract Manager identified below is the State's single point of contact and will perform all contract management pursuant to section 2-17-512, MCA, on behalf of the

State. Written notices, requests, complaints or any other issues regarding the contract should be directed to the State Contract Manager.

The State Contract Manager for this contract is:

Robert Oliver, Contracts Officer
Room 165 Mitchell Building
125 North Roberts
PO Box 200135
Helena MT 59620-0135
Telephone #: (406) 444-0110
Fax #: (406) 444-2529
E-mail: roliver@mt.gov

26.2 State Project Manager. Each using State agency or Cooperative Purchaser will identify a Project Manager in the project task order. The Project Manager will manage the day-to-day project activities on behalf of the State/Cooperative Purchaser.

27. CONTRACTOR PERSONNEL

27.1 Change Of Staffing. Since qualifications of personnel was key in determining which offerors were selected to be on this term contract list, a written notification to the State Procurement Bureau of any changes of key personnel must be made within two weeks of the change. These change notifications will be completed upon the departure or hiring of key personnel who are professional employees critical to awarded service areas. If these staffing changes cause the firm to no longer meet the qualifications stated herein, that firm will be removed from the service area of this term contract. Failure to notify the State Procurement Bureau of staffing changes could result in the contractor being removed from the term contract listing and possible suspension from bidding on other State projects.

27.2 Contractor Contract Manager. The Contractor Contract Manager identified below will be the single point of contact to the State Contract Manager and will assume responsibility for the coordination of all contract issues under this contract. The Contractor Contract Manager will meet with the State Contract Manager and/or others necessary to resolve any conflicts, disagreements, or other contract issues.

The Contractor Contract Manager for this contract is:

Darrel Stordahl, Principal
50 West 14th Street, Suite 200
Helena MT 59601
Telephone #: (406) 441-1400
Fax #: (406) 449-7725
E-mail: stordahl@cdm.com

27.3 Contractor Project Manager. The Contractor Project Manager identified below will manage the day-to-day project activities on behalf of the Contractor:

The Contractor Project Manager for this contract is:

Darrel Stordahl, Principal
50 West 14th Street, Suite 200
Helena MT 59601
Telephone #: (406) 441-1400
Fax #: (406) 449-7725
E-mail: stordahl@cdm.com

28. MEETINGS

The Contractor is required to meet with the State's personnel, or designated representatives, to resolve technical or contractual problems that may occur during the term of the contract or to discuss the progress made by Contractor and the State in the performance of their respective obligations, at no additional cost to the State. Meetings will occur as problems arise and will be coordinated by the State. The Contractor will be given a minimum of three full working days notice of meeting date, time, and location. Face-to-face meetings are desired. However, at the Contractor's option and expense, a conference call meeting may be substituted. Consistent failure to participate in problem resolution meetings two consecutive missed or rescheduled meetings, or to make a good faith effort to resolve problems, may result in termination of the contract.

29. CONTRACTOR PERFORMANCE ASSESSMENTS

The State may do assessments of the Contractor's performance. This contract may be terminated for one or more poor performance assessments. Contractors will have the opportunity to respond to poor performance assessments. The State will make any final decision to terminate this contract based on the assessment and any related information, the Contractor's response and the severity of any negative performance assessment. The Contractor will be notified with a justification of contract termination. Performance assessments may be considered in future solicitations.

30. TRANSITION ASSISTANCE

If this contract is not renewed at the end of this term, or is terminated prior to the completion of a project, or if the work on a project is terminated, for any reason, the Contractor must provide for a reasonable period of time after the expiration or termination of this project or contract, all reasonable transition assistance requested by the State, to allow for the expired or terminated portion of the services to continue without interruption or adverse effect, and to facilitate the orderly transfer of such services to the State or its designees. Such transition assistance will be deemed by the parties to be governed by the terms and conditions of this contract, except for those terms or conditions that do not reasonably apply to such transition assistance. The State shall pay the Contractor for any resources utilized in performing such transition assistance at the most current rates provided by the contract. If there are no established contract rates, then the rate shall be mutually agreed upon. If the State terminates a project or this contract for cause, then the State will be entitled to offset the cost of paying the Contractor for the additional resources the Contractor utilized in providing transition assistance with any damages the State may have otherwise accrued as a result of said termination.

31. CHOICE OF LAW AND VENUE

This contract is governed by the laws of Montana. The parties agree that any litigation concerning this bid, proposal or subsequent contract must be brought in the First Judicial District in and for the County of Lewis and Clark, State of Montana and each party shall pay its own costs and attorney fees. (See Mont. Code Ann. § 18-1-401.)

32. SCOPE, AMENDMENT AND INTERPRETATION

32.1 Contract. This contract consists of 12 numbered pages, any Attachments as required, RFP # SPB05-894P, as amended and the Contractor's RFP response as amended. In the case of dispute or ambiguity about the minimum levels of performance by the Contractor the order of precedence of document interpretation is in the same order.

32.2 Entire Agreement. These documents contain the entire agreement of the parties. Any enlargement, alteration or modification requires a written amendment signed by both parties.

33. EXECUTION

The parties through their authorized agents have executed this contract on the dates set out below.

**DEPARTMENT OF ADMINISTRATION
STATE PROCUREMENT BUREAU
PO BOX 200135
HELENA MT 59620-0135**

**CDM
50 WEST 14TH STREET, SUITE 200
HELENA MT 59601
FEDERAL ID # 04-2473650**

BY: _____
Penny Moon, Contracts Officer

BY: _____
(Name/Title)

BY: _____
(Signature)

BY: _____
(Signature)

DATE: _____

DATE: _____

ATTACHMENT A CONTRACTOR'S RESPONSE

Section 3

Method of Providing Services & Quality Assurance

Method of Providing Services

CDM established TMDLs in eight watersheds in Southeastern Illinois including the development of numeric targets for pollutant reductions, allocation approaches for sources, and implementation plans. TMDLs are being completed for the following constituents:

- Nutrients – nitrogen, phosphorus, nitrates
- Metals – manganese, copper, silver, mercury
- Inorganics – sulfates, pH, salinity/total dissolved solids/chlorides
- Siltation
- Habitat alterations

CDM is establishing TMDLs for 14 stream segments and 5 lakes. The nuances and unique issues related to each watershed, based on different data availability, land use, impairments, receiving water uses, etc., required that the approach be tailored to each application for each watershed. CDM's process for evaluating each watershed includes:

- Setting endpoints for the TMDLs
- Verifying impairments within the watersheds
- Source assessment based on EPA's BASINS model as the framework for data collection, watershed delineation, and loading prediction based on land use
- Establishing linkages for receiving water between sources and endpoints through modeling
- Determining the margin of safety
- Developing implementation plans

Throughout the process CDM is participating in public meetings to explain the TMDL process,

technical information on modeling, allocation strategies, and implementation planning.

For the IEPA, CDM provided a Project Management Plan (PMP) that ensured the project was on time and on budget.

Excellence in Project Management

CDM is well known for providing excellent project managers. Our project managers are trained to provide effective and efficient services to clients including:

- Maintaining clear channels of communication between the client and the project team by providing a single point of responsibility
- Providing appropriate, regular reporting from the project team to our client
- Maintaining direct lines of responsibility within the project team for the various work components
- Ensuring timely completion of the work according to an established schedule of activities
- Keeping the project costs within the budget
- Providing regular checks on project controls

Quality Management is First Priority

Our corporate mission requires commitment to project quality in all of our assignments. CDM's quality management program is our way of doing business – a structured approach to improvement based on client satisfaction. It is also used to measure whether we achieve our firm's improvement goals. Our quality management program is geared to improve:

- Quality of services
- Staff capability
- Health and safety
- Productivity

Section 3

Method of Providing Services & Quality Assurance

Method of Providing Services

CDM has assembled qualified staff that has experience in providing environmental services in various watersheds and areas of Montana. CDM plans to manage all of the requested services from our Helena office. Having an office in Helena enables the staff to have direct contact with DEQ. This was a great asset when preparing the Beaverhead River Watershed Phase I report.

CDM prepared the Beaverhead River Watershed Phase I Report within a four month timeframe. This aggressive timeframe was accomplished by careful coordination of the project with the Beaverhead Conservation District and DEQ. The first step of the Phase I report was to develop an understanding of the environmental setting of the watershed and compile pertinent existing data related to the watershed. The location of our offices made it possible to carry out this portion of the task expediently. Our vast experience with TMDL assessments allowed CDM to compare the available data to preliminary target to make preliminary water quality impairment determinations. CDM's policy ensures that a document is not delivered until appropriate quality control has been performed. Hours are always set aside upfront for this important task. A top quality Phase I report was produced and delivered to BCD which allowed for the next phase of the process to begin. In summary, the following steps were taken when preparing the Beaverhead River Watershed Phase I Report:

- Upfront meetings with BCD and DEQ;
- Careful coordination of delegation of tasks within CDM and with subcontractors;
- Attending BCD meetings to present updates on project progress; and
- Assigned quality control/quality assurance.

Excellence in Project Management

CDM is well known for providing excellent project managers. Our project managers are trained to provide effective and efficient services to clients including:

- Maintaining clear channels of communication between the client and the project team by providing a single point of responsibility
- Providing appropriate, regular reporting from the project team to our client
- Maintaining direct lines of responsibility within the project team for the various work components
- Ensuring timely completion of the work according to an established schedule of activities
- Keeping the project costs within the budget
- Providing regular checks on project controls

Quality Management is First Priority

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- Quality of services
- Staff capability
- Health and safety
- Productivity

Section 4

Staff Qualifications

An Experienced Project Team

Presented in this section are the qualifications of the CDM staff. The table at the end of this section summarizes the team's qualifications. Rates for each person named in the table can be found in Section 5, Cost, of this proposal.

The success of any project is driven by CDM's most important resource: people who are qualified, responsive, experienced, and committed to the project at hand. CDM has carefully selected a team of water resources professionals to provide stakeholder participation services. The organization of our team is illustrated below.

Brian Goodman, Project Manager, Water Quality Modeling

Mr. Goodman has over 20 years experience as a hydrogeologist, resource development geologist, and environmental remediation and compliance specialist.

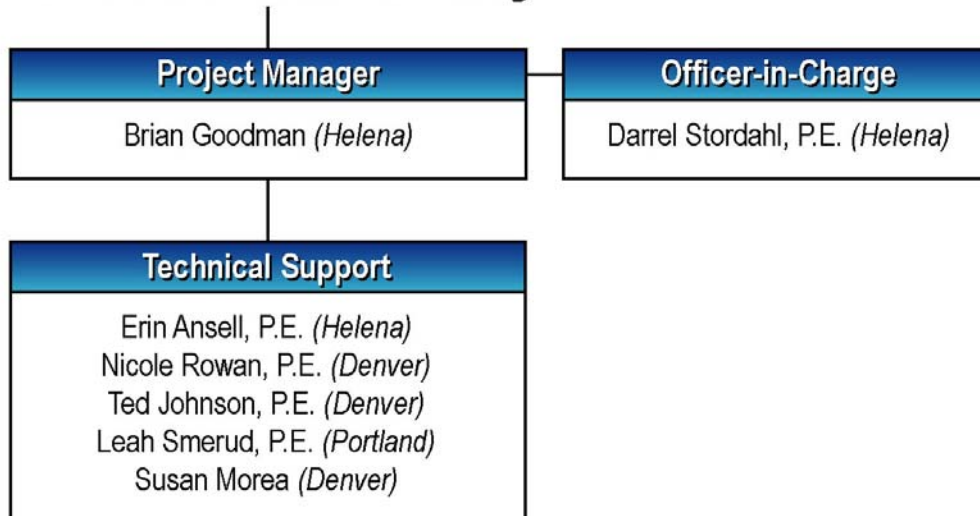
Mr. Goodman is currently working with DEQ, serving as the project hydrogeologist for the closure EIS of a former CR Kendall gold mine in central Montana. He assisted in the facilitation of public and technical working group meetings, evaluated site hydrogeologic data for mine-related groundwater and surface water impacts, performed surface water sampling, and prepared a hydrogeologic report. Additional data collection and evaluation is scheduled for 2004.

Years of Experience: 20
Education: .Sc., Engineering,
Hydrology and Water Resources,
University of Arizona

Post Graduate Studies, Geochemistry,
University of Windsor, Ontario

B.Sc., Geological Sciences, University
of Texas at Austin

Montana Department of Environmental Quality



An experienced team, familiar with water quality modeling in Montana, can provide DEQ with comprehensive services.

Relevant to this project, his project and technical expertise includes hydrogeologic characterization, subsurface geologic studies, groundwater and surface water quality studies, environmental remediation of chlorinated solvents and petroleum, water supply and monitoring well design.

Darrel Stordahl, P.E.

Client Officer

Mr. Stordahl is an engineer with 17 years of experience in the engineering field. Mr. Stordahl is currently the senior project manager for the C.R. Kendall Mine Post-Closure Environmental Impact Statement (EIS) project for the Montana DEQ. Mr. Stordahl is currently working on the EIS *to ensure compliance with the Montana Environmental Policy Act* (MEPA) that is patterned after the National Environmental Policy Act (NEPA). The EIS is being utilized to identify reclamation and long-term water treatment alternatives for the closed gold mine located near Hilger, Montana.

Years of Experience: 17
Education: M.S. - Environmental Engineering, Montana College of Mineral Science and Technology
B.S. - Mining Engineering, Montana College of Mineral Science and Technology
Registration: Professional Engineer: Montana

Erin Ansell, P.E.

Technical Support

Ms. Ansell has five years of experience in water resources engineering, specializing in flood control, floodplain management, and stormwater management planning. Ms. Ansell has experience in the modeling, design, construction, and permitting processes required for an array of stormwater and flood management projects such as drop structures, culverts, detention ponds, and stormwater outfalls.

Years of Experience: 5
Education: B.S. - Civil Engineering (Water Resources, University of Virginia)
Registration: Professional Engineer: Colorado

Her recent modeling projects include converting a steady-state HEC-RAS model to an unsteady HEC-RAS model for Harris County, Texas, as well as ad hoc modeling tasks for the Metropolitan Milwaukee Sewerage District.

Nicole Rowan, P.E.

TMDL Targets, Source Assessment, Load Allocation

Ms. Rowan is an environmental engineer with expertise in watershed water quality planning. She has extensive knowledge of various regulatory issues such as NPDES permitting, TMDL program, and industrial pretreatment programs.

Ms. Rowan has extensive experience in TMDL development for watersheds, lakes, and streams. She has reviewed 303(d) listings, assessed numeric targets for TMDL development, methodology development,

TMDL calculation, allocation approaches and implementation strategies.

Ted Johnson, P.E.

Technical Support

Mr. Johnson has more than 20 years of experience in environmental engineering, river restoration and wetlands enhancement, wastewater and drainage way master planning, feasibility studies, specializing in dam inspection and rehabilitation, and drainage and flood control systems analysis. Mr. Johnson has also been actively involved in the development and use of geographic information systems (GIS) for planning and design purposes.

Years of Experience: 5
Education: B.S. - Civil Engineering (Water Resources, University of Virginia)
Registration: Professional Engineer: Colorado

Mr. Johnson's Montana experience includes acting as senior technical advisor for the development of a drainage and sediment control plan at Luzenac America's Yellowstone Mine, an open pit talc mine in the east foothills of Montana's Gravelly Range. The plan was implemented as part of the mine reclamation activities. He also *obtained additional Clean Water Act Section 404 permitting* for disposal of main tailings at the mine.

Years of Experience: 20
Education: B.S. - Civil Engineering, University of Colorado
A.A.S. - Land Surveying, Flathead Valley Community College

Leah Smerud, P.E.

Technical Support

Ms. Smerud is a water resources engineer who specializes in the areas of groundwater, hazardous materials, and remediation. She is proficient in using MODFLOW, SURFER, QUAL2E, STREAMDO, FORTRAN, and *ArcView*.

Ms. Smerud has extensive water modeling experience. For the Minnesota Department of Natural Resources' Straight River project, Ms. Smerud helped to conduct groundwater modeling efforts. She compiled data for use in MODFLOW and performed model calibration and analysis.

For the Phoenix Sky Harbor Airport, Ms. Smerud helped to conduct groundwater modeling efforts. She compiled data for use in MODFLOW and performed model calibration and analysis.

Years of Experience: 6
Education: M.S. - Civil Engineering, Emphasis in Water Resources, University of Colorado (1998)
B.S. - Civil Engineering, Emphasis in Environmental Engineering, University of Colorado
Registration: Professional Engineer: Colorado

For the City of Santa Fe water supply plan, Ms. Smerud helped to conduct groundwater modeling efforts. She

compiled data for use in MODFLOW and performed model calibration and analysis.

Sue Morea
Technical Support

Ms. Morea has been involved in the analysis, planning, and report phases for a broad range of projects for the federal, state, municipal, and private sectors. Her experience has included watershed

Years of Experience: 20
Education: M.S. - Environmental
Engineering, Colorado State University
B.A. - Biology, University of Colorado

management, stormwater management, NPDES permitting, water quality modeling, integrated resource management, Section 208 Areawide Water Quality Management Planning, RI/FS Superfund work, regulatory interpretation of the CWA, UAAs, and Safe Drinking Water Act (SDWA) compliance. She has worked extensively in Colorado, Montana, New Mexico, Kansas, Oklahoma, Arizona, California, and Texas negotiating NPDES permits for a variety of clients.

Ms. Morea is currently the technical director for the Arid West Water Quality Research Habitat Characterization Project. This project will identify biological, chemical, and physical characteristics at ten locations in the southwest. zone model to project the mixing zone configuration of both discharges during regulatory low-flow conditions in the Kansas River.

Team Member / Role	Degrees	Registrations	Years of Experience	Years of Similar Project Experience	Specialty Training / Experience
Brian Goodman Hydrology	M.Sc. – Engineering, Hydrology and Water Resources, University of Arizona B.Sc. – Geological Sciences, University of Texas at Austin	Qualified Site Assessor, Alaska DEQ	20	20	Currently serving as project hydrogeologist for numerous projects in Montana and has technical expertise in Montana hydrogeologic characterization. Conducted regulatory and public meetings for the voluntary cleanup of the former railroad refueling state Superfund site in Deer Lodge, Montana.
Darrel Stordahl Client Officer	M.S. - Environmental Engineering, Montana College of Mineral Science and Technology B.S. Mining Engineering, Montana College of Mineral Science and Technology	Professional Engineer: Montana	17	17	Mr. Stordahl is currently the senior project manager for the C.R. Kendall Mine Post-Closure EIS project for DEQ. Mr. Stordahl is currently working on the EIS to ensure compliance with the MEPA that is patterned after the NEPA. The EIS is being utilized to identify reclamation and long-term water treatment alternatives for the closed gold mine located near Hilger, Montana. Experienced in hazardous waste remedial design and construction oversight, planning for water and wastewater treatment systems.
Erin Ansell	B.S. - Civil Engineering (Water Resources, University of Virginia)	Professional Engineer: Colorado	5	5	Certified Floodplain Manager. Extensive experience with modeling, mapping, and regulations relating to the Federal Emergency Management Agency's National Flood Insurance Program. Has created maps of 100- and 500-year floodplains and floodway as well as flood profiles for the 10-, 50-, 100-, and 500-year storm events.
Nicole Rowan	B.S. – Biological Systems Engineering, University of Nebraska-Lincoln	Professional Engineer: Kansas, Colorado	5	5	Extensive knowledge of various regulatory issues such as TMDLs and NPDES permitting. Currently managing TMDL development for eight watersheds in Southern Illinois.
Ted Johnson	B.S. - Civil Engineering, University of Colorado A.A.S. - Land Surveying, Flathead Valley Community College	Professional Engineer: Colorado	20	20	Highways in the River Environment, Department of Transportation training course in sediment transport. Federal Highway Administration. Health and Safety Training in Compliance with OSHA Standard 29 CFR 1910.12. Arc/Info Basic and Advanced Training Courses. Applied Fluvial Geomorphology training.
Leah Smerud	M.S. - Civil Engineering, Emphasis in Water Resources, University of Colorado B.S. - Civil Engineering, Emphasis in Environmental Engineering, University of Colorado	Professional Engineer: Colorado	6	6	Proficient in using MODFLOW, SURFER, QUAL2E, STREAMDO, FORTRAN, and <i>ArcView</i> . Data collection and analyses for use in a groundwater model.
Sue Morea	M.S. – Environmental Engineering, Colorado State University B.S. – Biology, University of Colorado	n/a	20	20	CDM's water resource practice leader for the western United States. American Consulting Engineer's Council (ACEC) National Engineering Excellence Award for the Passive Treatment System Pilot Plant at the Clear Creek/Central City Superfund Site.

Section 4 Staff Qualifications

An Experienced Project Team

Presented in this section are the qualifications of the CDM staff. The table at the end of this section summarizes the team's qualifications. Rates for each person named in the table can be found in Section 5, Cost, of this proposal.

The success of any project is driven by CDM's most important resource: people who are qualified, responsive, experienced, and committed to the project at hand. CDM has carefully selected a team of water resources professionals to provide stakeholder participation services. The organization of our team is illustrated below.

Gwen Pozega, P.E. *Project Manager, TMDL*

Ms. Pozega is an engineer with nine years of experience in the civil and environmental fields. Her experience includes planning for water and wastewater treatment systems, designing water and wastewater treatment systems, reviewing plans and specifications, regulating and providing technical assistance to operators and managers, storm drainage design, engineering oversight

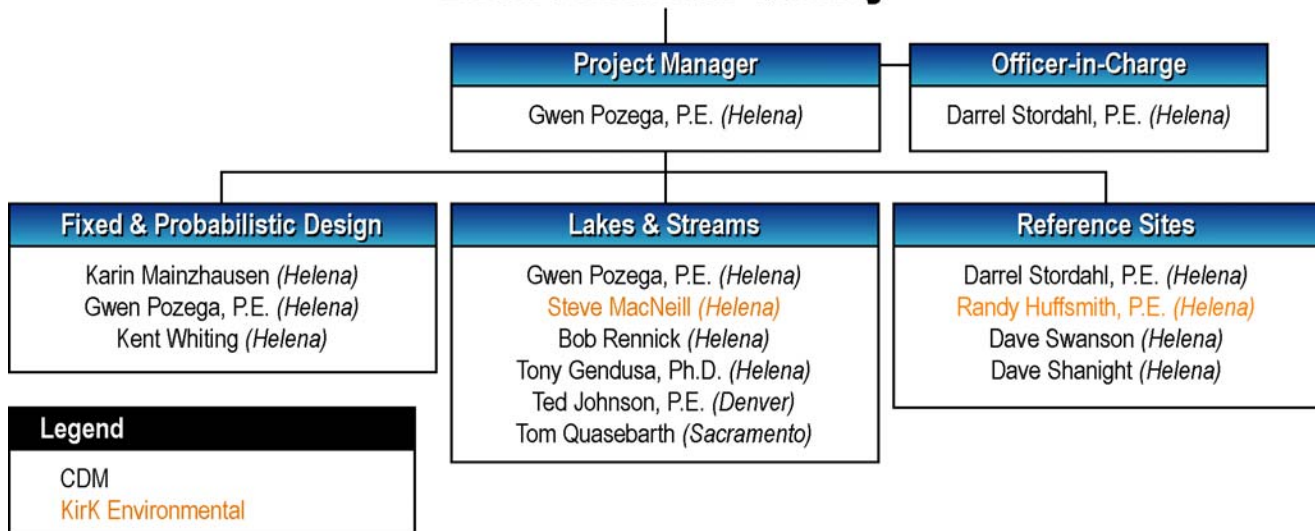
of construction, and inspections of wastewater treatment systems for optimizing operations.

When employed with Montana DEQ, Ms. Pozega provided project management and technical reviews of municipal wastewater treatment systems. Ms.

Pozega provided review comments to municipalities in regard to the completeness of alternatives studied in planning documents and also in regard to the estimated design and construction costs of each alternative. Ms. Pozega prepared environmental assessments for local, county, state, and federal governments was also an important task of the review process. *She gained extensive knowledge of Montana state rules and regulations as an environmental engineer for DEQ.*

Years of Experience: 9 Education: Montana College of Mineral Science and Technology Butte, Montana B.S. - Engineering Science Registration: Professional Engineer: Montana
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Montana Department of Environmental Quality



Darrel Stordahl, P.E.

Client Officer

Mr. Stordahl is an engineer with 17 years of experience in the engineering field. Mr. Stordahl is currently the senior project manager for the C.R. Kendall Mine Post-Closure Environmental Impact Statement (EIS) project for the Montana DEQ. Mr. Stordahl is currently working on the EIS *to ensure compliance with the Montana Environmental Policy Act* (MEPA) that is patterned after the National Environmental Policy Act (NEPA). The EIS is being utilized to identify reclamation and long-term water treatment alternatives for the closed gold mine located near Hilger, Montana.

Years of Experience: 31
Education: Ph.D. - Ecology
(Aquatic/Ecological Toxicology),
University of North Texas

M.S. - Medical Technology, California
State University

B.A. - Biological Sciences, California
State University

Karin Mainzhausen

Fixed & Probabilistic Design

Ms. Mainzhausen is an engineer-in-training and has 4 years experience in all phases of environmental projects including environmental assessments, contamination evaluation, field and laboratory testing, and remedial action design and implementation. Her fieldwork experience includes obtaining groundwater and soil samples and testing chemical data, as well as experience in UST investigations, hazardous waste cleanup, managing treatability studies, and executing work plans. She has also conducted feasibility studies for SVE systems, metal stabilization, and removal using flocculants.

Years of Experience: 4
Education: B.S.-Environmental
Engineering, Montana Tech of the
University of Montana

B.S., Environmental Engineering,
Montana Tech of the University of
Montana

Kent Whiting

Fixed & Probabilistic Design

Mr. Whiting is an aqueous geochemist with 14 years of experience in the environmental field. He has worked on projects at a variety of environmental sites, including current and former mining, wood-treating, foundry, and landfill sites. Mr. Whiting's responsibilities have included designing and conducting treatability studies, planning sampling programs, leading sampling teams in the field, geochemical modeling, database management, and multivariate and landfill statistical evaluations. He has also provided

Years of Experience: 14
Education: B.S. - Geochemistry,
Colorado School of Mines

B.S. - Geology, Ohio State University

litigation support, including technical review of expert opinions, formulation of deposition questions, and technical support during deposition testimony.

Steve MacNeill

Lakes & Streams

Mr. MacNeill has 17 years of experience performing and managing environmental and hazardous waste site investigations. His responsibilities include both the field work and management aspects of soils and wetlands related projects, phase I and phase II ESAs, RI, FS, and preliminary assessments. His field work experience includes soil characterization and wetlands delineation; chemical, physical, and biological assessment of impacted surface water bodies; geophysical investigations; environmental sample collection; and installation of groundwater monitoring wells.

Years of Experience: 17
Education: B.S. - Soil and Water
Science, University of California at
Davis

Mr. MacNeill completed an expanded engineering evaluation and cost analysis evaluating reclamation alternatives for the Alta Mine site near Helena. Alternatives for reclamation being evaluated included excavation of the waste rock and disposal in a modified RCRA repository and reconstruction of the original drainage. Also being considered were alternatives that will allow for the capture and diversion of groundwater discharge from the shaft, recontouring of the waste rock, and revegetation of the site.

Tony Gendusa, Ph.D.

TMDL Targets and Source Assessment

Dr. Gendusa's area of expertise includes aquatic ecology and biology, aquatic/ecotoxicology, aquatic habitat assessment, and ERA. More specifically, his area of expertise focuses on the potential impacts to aquatic and terrestrial species, including threatened and endangered species, from a variety of ecological stressors including chemically contaminated water, sediment, soil, and biota.

At the New World Mining site in Montana Dr. Gendusa evaluated the magnitude and distribution of major contaminants, with emphasis on potential impacts to periphyton, fish, and macroinvertebrates. Chemical, physical, and biological data from several years of investigations were compiled and summarized to assess the degree of mining-related impairment onsite and adjacent to the site. Dr. Gendusa also provided expert

testimony on the degree of stream impairment to the Montana Water Quality Board in Helena.

At another Montana project, the Streamside Tailings Operable Unit - Silver Bow Creek, Dr. Gendusa evaluated the magnitude and distribution of major contaminants, with emphasis on potential impacts to periphyton, fish, and macroinvertebrates. Data were used to support NRDA investigation completion.

Ted Johnson, P.E.
Lakes & Streams

Mr. Johnson has more than 20 years of experience in environmental engineering, river restoration and wetlands enhancement, wastewater and drainage way master planning, feasibility studies, specializing in dam inspection and rehabilitation, and drainage and flood control systems analysis. Mr. Johnson has also been actively involved in the development and use of geographic information systems (GIS) for planning and design purposes.

Mr. Johnson’s Montana experience includes acting as senior technical advisor for the development of a drainage and sediment control plan at Luzenac America's Yellowstone Mine, an open pit talc mine in the east foothills of Montana's Gravelly Range. The plan was implemented as part of the mine reclamation activities. He also obtained additional Clean Water Act Section 404 permitting for disposal of main tailings at the mine.

David Swanson
Reference Sites

Mr. Swanson has 22 years of experience. He has worked as a field team leader with CDM for the EPA Region 8 Tenmile and Basin Creek Watershed Evaluations. His responsibilities included stream and river flow measurements, abandoned mine evaluations and surveys, adit discharge, and waste rock sampling.

Mr. Swanson has substantial experience obtaining samples for investigations and compliance while at the Basin creek mine. Mr. Swanson supervised sampling of soils, groundwater, and surface water. In addition, Mr. Swanson, while maintaining strict adherence to SAPs, obtained soil, groundwater, and surface water samples for EOA on the Tenmile Creek, Basin Creek, and Town of Basin projects. Mr. Swanson also conducted field programs for asbestos sampling in Libby.

David Shanight
Reference Sites

Mr. Shanight specializes in providing technical support to CDM project managers and agency personnel. He has worked on a variety of NPL sites and on a number of abandoned mines located on state and federal property.

Mr. Shanight provided oversight for the EPA at the Anaconda Smelter Site. At the Upper Tenmile Creek project, Mr. Shanight served as field team leader for investigation of a mountainous watershed site contaminated by arsenic, cadmium, copper, lead, mercury, and zinc. He led sampling of mine wastes, soils, surface water, sediment, and groundwater.

Years of Experience: 22
Education: 2 years of Mechanical
Engineering and Drafting, Portland
Regional Technical Center

Years of Experience: 20
Education: B.S. - Civil Engineering,
University of Colorado

A.A.S. - Land Surveying, Flathead
Valley Community College

Years of Experience: 5
Education: B.S. - Abused Land
Rehabilitation, Montana State
University

Team Member / Role	Degrees	Registrations	Years of Experience	Years of Similar Project Experience	Specialty Training / Experience
Gwen Pozega Project Manager	B.S. – engineering Science, Montana College of Mineral Science and Technology	Professional Engineer: Montana	9	9	Hazardous Waste Training, Advanced Water Pollution Control: Biological Wastewater Treatment. Former DEQ project manager. Experience in water quality studies and investigations. Extensive knowledge of DEQ regulations.
Darrel Stordahl Client Officer	M.S. - Environmental Engineering, Montana College of Mineral Science and Technology B.S. Mining Engineering, Montana College of Mineral Science and Technology	Professional Engineer: Montana	17	17	Environmental engineer 17 years of experience in the engineering field. Mr. Stordahl is currently the senior project manager for the C.R. Kendall Mine Post-Closure Environmental Impact Statement (EIS) project for the Montana Department of Environmental Quality (DEQ). Mr. Stordahl is currently working on the EIS to ensure compliance with the Montana Environmental Policy Act (MEPA) that is patterned after the National Environmental Policy Act (NEPA). The EIS is being utilized to identify reclamation and long-term water treatment alternatives for the closed gold mine located near Hilger, Montana. Experienced in hazardous waste remedial design and construction oversight, planning for water and wastewater treatment systems.
Kent Whiting Fixed & Probabilistic Design	B.S. - Geochemistry, Colorado School of Mines B.S. – Geology, Ohio State University	n/a	14	14	Developed the use of the electron microprobe for allocation, bioavailability, and fate and transport of metals at environmental sites. Familiar with both EPA and ASTM groundwater monitoring statistical procedures for RCRA sites.
Steve MacNeill Lakes and Streams	B.S. – Soil and Water Science, University of California at Davis	n/a	17	17	Mr. MacNeill completed a course put on by the NRCS that provided training in evaluating the health of riparian-wetland areas.
Tony Gendusa Lakes and Streams	Ph.D. – Ecology, University of North Texas M.S. – Medical Technology, California State University B.S – Biological Sciences, California State University	n/a	31	31	Attended the U.S. Army Corps of Engineers-approved 40-hour training for certified wetlands specialist (1997). Currently awaiting USACE testing and certification procedures to be completed. Attended OSHA 40 Health and Safety Training (1992) with annual updates. Attended EPA Three-day Risk Assessment Workshop.
Ted Johnson Lakes and Streams	B.S. - Civil Engineering, University of Colorado) A.A.S. - Land Surveying, Flathead Valley Community College	Professional Engineer: Colorado	31	31	Highways in the River Environment, Department of Transportation training course in sediment transport. Federal Highway Administration. Health and Safety Training in Compliance with OSHA Standard 29 CFR 1910.12. Arc/Info Basic and Advanced Training Courses. Applied Fluvial Geomorphology training.

Team Member / Role	Degrees	Registrations	Years of Experience	Years of Similar Project Experience	Specialty Training / Experience
David Swanson	Mechanical Engineering and Drafting, Portland Regional Technical Center	n/a	22	22	MSHA First Aid and Mine Rescue Training. OSHA 40-Hour Hazardous Material Training, Portable Nuclear Gauge Operations & Safety Training, and State of Montana Firefighting and Fire Rescue Training.
David Shanight	B.S. – Abused Land Rehabilitation, Montana State University	n/a	5	5	Provided oversight for the EPA and delineated the extent of aerial contamination from over 100 years of ore processing operations and large quantities of wastes with elevated concentrations of arsenic and metals such as copper, cadmium, lead, and zinc.
Karin Mainzhausen Fixed & Probabilistic Design	B.S. – Environmental Engineering, Montana Tech of the University of Montana	EI.: Montana	4	4	HAZWOPER training. Experience in water quality monitoring projects in Montana.

Section 3

Method of Providing Services & Quality Assurance

Method of Providing Services

For the Kendall Mine Closure EIS, Ms. Ekstrom provided a Project Management Plan (PMP) that ensured the project was on time and on budget.

For this highly polarized and sensitive project, CDM prepared a PMP that outlined the specific project tasks, deliverables, schedule, budget, and other pertinent project information. The PMP was used by the project team to ensure that the work was completed according to schedule and budget. The Community Involvement Coordinator (CIC) used the PMP as a basis for management of the scoping task. To ensure that the project was progressing as scheduled, a kick-off meeting was held between the client and the project team. From that meeting, the CIC prepared and sent an email to the team and client listing input and approvals needed by individuals by specific times to ensure completion of project milestones. The CIC also prepared a weekly update of the status of those items. This process was continued iteratively until the Scoping task was finished and several additional meetings with the client were also included to ensure that progress was satisfactory.

The CIC used the PMP and the DEQ contract as a roadmap for completing the individual scoping subtasks, including: development of interview questions, preparation and mailing of a scoping document (fact sheet) to stakeholders, interviews with local stakeholders, facilitation of an open house and public meeting, development of a results memorandum, preparation of meeting minutes and summary, and preparation of a scoping document (report). The project had a very short turn around time, which was further shortened by initial delays in the State's contracting vehicle. *CDM was able to meet the challenges of this schedule and deliver all pertinent deliverables and work products on time and within budget.* The stakeholders were engaged and

involved and reported feeling satisfied that their concerns had been heard. *DEQ was pleased with the quality of the work and the adherence to schedule and budget.*

Excellence in Project Management

CDM is well known for providing excellent project managers. Our project managers are trained to provide effective and efficient services to clients including:

- Maintaining clear channels of communication between the client and the project team by providing a single point of responsibility
- Providing appropriate, regular reporting from the project team to our client
- Maintaining direct lines of responsibility within the project team for the various work components
- Ensuring timely completion of the work according to an established schedule of activities
- Keeping the project costs within the budget
- Providing regular checks on project controls

Quality Management is First Priority

Our corporate mission requires commitment to project quality in all of our assignments.

CDM's quality management program is our way of doing business — a structured approach to improvement based on client satisfaction. It is also used to measure whether we achieve our firm's improvement goals.

Thinking Globally, Acting Locally

CDM appreciates the demands and nuances intrinsic to doing business in an ever more integrated global economy. Our international resources, connected by a common purpose and shared goals, enable the organization to "think globally." Our local management and project delivery capabilities, supported by these global resources, ensure clients that we "act locally."

Section 4

Staff Qualifications

An Experienced Project Team

Presented in this section are the qualifications of the CDM staff. The table at the end of this section summarizes the team's qualifications. Rates for each person named in the table can be found in Section 5, Cost, of this proposal.

The success of any project is driven by CDM's most important resource: people who are qualified, responsive, experienced, and committed to the project at hand. CDM has carefully selected a team of water resources professionals to provide stakeholder participation

Years of Experience: 17

Education: M.S. - Environmental Engineering, Montana College of Mineral Science and Technology

B.S. - Mining Engineering, Montana College of Mineral Science and Technology

Registration: Professional Engineer: Montana

and private-sector and federal-sector consultants. She has lived and worked in or around Helena for over 14 years. *She specializes in project management, community involvement, and public outreach and education.*

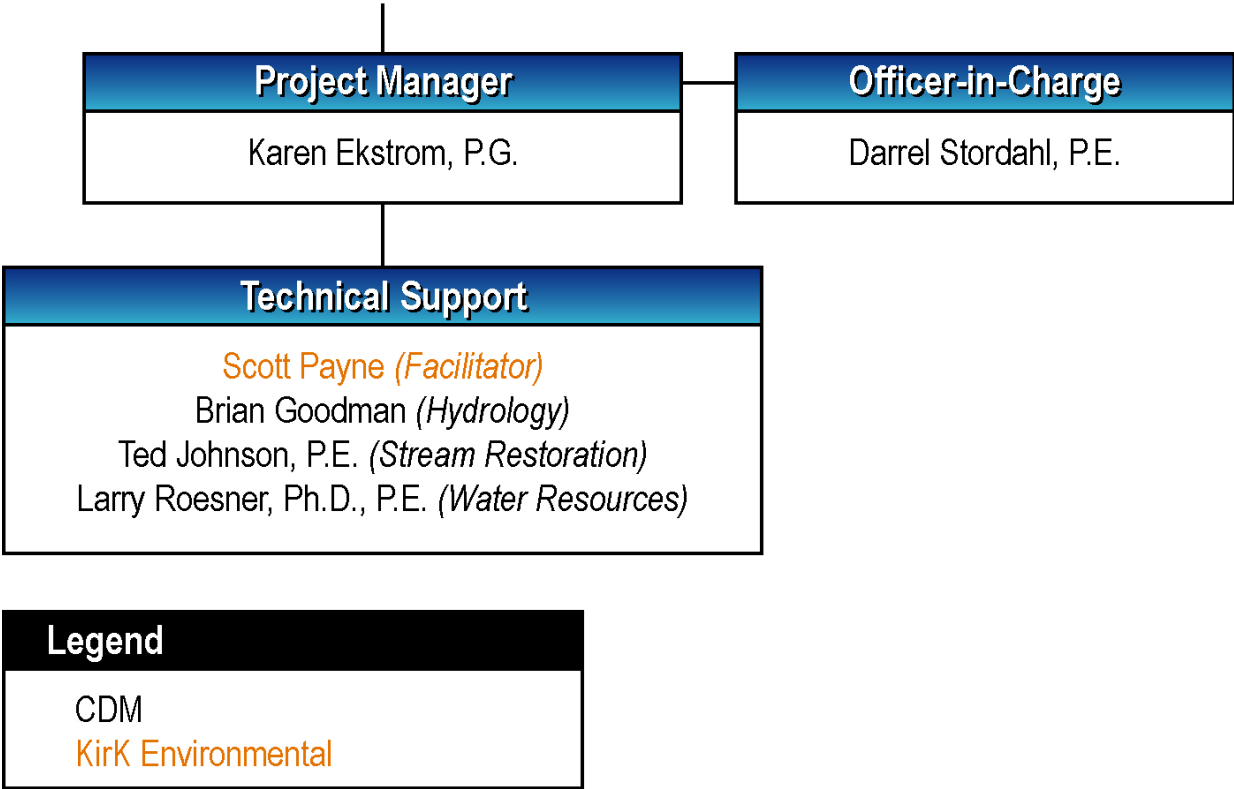
Ms. Ekstrom *currently serves as the community involvement coordinator for CDM at six EPA Superfund sites* (Anaconda Smelter, Butte Priority Soils, Town of Basin, Upper Tenmile Creek Mining Area, Libby Asbestos, and Carpenter-Snow Creek Mining Area). She is also the community involvement coordinator for the CR Kendall Mine Environmental

Years of Experience: 21

Education: B.S. - Geology, University of Nevada

Registration: Professional Geologist, Wyoming

Montana Department of Environmental Quality



Impact Statement.

Darrel Stordahl, P.E. Client Officer

Mr. Stordahl is an engineer with 17 years of experience in the engineering field. Mr.

services. The organization of our team is illustrated below.

Karen Ekstrom, P.G. Project Manager

Ms. Ekstrom has over 21 years of experience in the environmental field, including service with EPA, DEQ,

Stordahl is currently the senior project manager for the CR Kendall Mine Post-Closure Environmental Impact Statement (EIS) project for the Montana DEQ. Mr. Stordahl is currently working on the EIS to ensure compliance with the Montana Environmental Policy Act (MEPA) that is patterned after the National Environmental Policy Act (NEPA). The EIS is being

utilized to identify reclamation and long-term water treatment alternatives for the closed gold mine located near Hilger, Montana.

Brian Goodman
Hydrology

Mr. Goodman has over 20 years experience as a hydrogeologist, resource development geologist, and environmental remediation and compliance specialist. He has direct project and technical expertise in numerous areas including: hydrogeologic characterization, subsurface geologic studies, and groundwater and surface water quality studies.

Mr. Goodman served as the project manager and technical lead for the voluntary cleanup of an abandoned railroad refueling site in Deer Lodge, listed as a high priority site in the Montana state superfund (CECRA) program. He conducted historical research, prepared the client proposal and presentation, authored the successful state grant application, *conducted regulatory and public meetings*, and supervised field operations.

Scott Payne, (KirK Environmental)
Facilitator

Mr. Payne has more than 16 years of experience as a professional hydrogeologist, environmental consultant, watershed coordinator, and group facilitator. He has extensive watershed planning, project management, communication, and financial management experience. He also has extensive experience evaluating/monitoring physical and chemical conditions associated with surface water, groundwater and aquifer systems, interpreting surface and groundwater chemistry, evaluating potential groundwater supplies for industry and municipalities, preparing water right applications, reviewing grant applications, and conducting analytical and numerical groundwater flow and solute transport modeling.

Years of Experience: 20
Education: M.Sc., Engineering, Hydrology and Water Resources, University of Arizona
B.Sc., Geological Sciences, University of Texas at Austin

Ted Johnson, P.E.
Stream Restoration

Mr. Johnson has more than 20 years of experience in environmental engineering, river restoration and wetlands enhancement, wastewater and drainage way master planning, feasibility studies, specializing in dam inspection and rehabilitation, and drainage and flood control systems analysis.

Mr. Johnson's project experience in Montana includes a geomorphic assessment of Warm Springs Creek, a critical bull and cutthroat trout spawning habitat in southwestern Montana.

Years of Experience: 31
Education: Ph.D. - Sanitary Engineering, University of Washington
M.S. - Hydrology, Colorado State University
B.S. - Civil Engineering, Valparaiso University
Registration: Professional Engineer: California, Florida, Virginia, Michigan, Ohio

Years of Experience: 18
Education: M.S. - Geology, University of Montana; B.S. - Earth Science, Montana State College

He *obtained additional Clean Water Act Section 404 permitting* for

disposal of main tailings at Luzenac Mine in Cameron. Mr. Johnson was also responsible for the development of an urban runoff water quality model using the computer program Storage, Treatment, Overflow, Runoff Model (STORM) at the Silver Bow/Butte Superfund Site.

Larry Roesner, Ph.D., P.E.
Water Resources

Dr. Roesner has 31 years of experience in water resources and water quality engineering and management. *He is a nationally recognized expert in the development and application of hydrologic, hydraulic, and water quality simulation models.*

Years of Experience: 20
Education: B.S. - Civil Engineering, University of Colorado
A.A.S. - Land Surveying, Flathead Valley Community College
Registration: Professional Engineer: Colorado

Since 1970, Dr. Roesner's area of specialty has been urban hydrology and nonpoint source pollution control. He is a principal developer of CDM's Urban Stormwater Runoff and Quality models. He is also a principal developer of the USACE model STORM, a simplified urban stormwater management model, and the EPA SWMM EXTRAN model, a sophisticated flow-routing model for urban drainage systems.

Team Member / Role	Degrees	Registrations	Years of Experience	Years of Similar Project Experience	Specialty Training / Experience
Karen Ekstrom Project Manager	B.S. – Geology, University of Nevada	Professional Geologist: Wyoming	14	14	Currently serves as community involvement coordinator at six EPA Superfund sites in Montana. Former Montana DEQ Ombudsman. Relevant experience includes implements community involvement tools, facilitating meetings, and serving as a general resource on community involvement. She also provides community involvement training for CDM.
Darrel Stordahl Client Officer	M.S. - Environmental Engineering, Montana College of Mineral Science and Technology B.S. Mining Engineering, Montana College of Mineral Science and Technology	Professional Engineer: Montana	17	17	Environmental engineer 17 years of experience in the engineering field. Mr. Stordahl is currently the senior project manager for the CR Kendall Mine Post-Closure Environmental Impact Statement (EIS) project for the Montana Department of Environmental Quality (DEQ). Mr. Stordahl is currently working on the EIS to ensure compliance with the Montana Environmental Policy Act (MEPA) that is patterned after the National Environmental Policy Act (NEPA). The EIS is being utilized to identify reclamation and long-term water treatment alternatives for the closed gold mine located near Hilger, Montana. Experienced in hazardous waste remedial design and construction oversight, planning for water and wastewater treatment systems.
Brian Goodman Hydrology	M.Sc. – Engineering, Hydrology and Water Resources, University of Arizona B.Sc. – Geological Sciences, University of Texas at Austin	Qualified Site Assessor, Alaska DEQ	20	20	Currently serving as project hydrogeologist for numerous projects in Montana and has technical expertise in Montana hydrogeologic characterization. Conducted regulatory and public meetings for the voluntary cleanup of the former railroad refueling state Superfund site in Deer Lodge, Montana.
Scott Payne Facilitator	M.S. – Geology, University of Montana B.S. – Earth Science, Northland College	Professional Geologist: Wyoming Registered Geologist: California	18	18	Experience with several prominent watershed groups in Western Montana. Provides technical information in support of community voluntary actions and education. He has extensive watershed planning, project management, communication, and financial management experience.
Ted Johnson Stream Restoration	B.S. – Civil Engineering, University of Colorado A.A.S. – Land Surveying, Flathead Valley Community College	Professional Engineering: Colorado	20	20	Participated in Stream Corridor Restoration Workshop sponsored by the National Resources Conservation Service. Other classes and training: Highways in the River Environment, Department of Transportation training course in sediment transport taught by D. B. Simons and E. V. Richardson. Federal Highway Administration. Arc/Info Basic and Advanced Training Courses, ESR. Applied Fluvial Geomorphology, Wildland Hydrology Consultants.
Larry Roesner Water Resources	Ph.D. - Sanitary Engineering, Univ. of Washington M.S. - Hydrology, Colorado State University B.S. - Civil Engineering, Valparaiso University	Professional Engineer: Virginia, Michigan, Maryland, Ohio Professional Hydrologist: American Institute of Hydrology	31	31	Experienced in water resources and water quality engineering and management. Nationally recognized expert in the development and application of hydrologic, hydraulic, and water quality simulation models.

Section 3

Method of Providing Services & Quality Assurance

Method of Providing Services

CDM has assembled qualified staff that has experience in providing environmental services in various watersheds and areas of Montana. CDM plans to manage all of the requested services from our Helena office. Having an office in Helena enables the staff to have direct contact with DEQ. This was a great asset when preparing the Beaverhead River Watershed Phase I report.

CDM prepared the Beaverhead River Watershed Phase I Report within a four month timeframe. This aggressive timeframe was accomplished by careful coordination of the project with the Beaverhead Conservation District and DEQ. The first step of the Phase I report was to develop an understanding of the environmental setting of the watershed and compile pertinent existing data related to the watershed. The location of our offices made it possible to carry out this portion of the task expediently. Our vast experience with TMDL assessments allowed CDM to compare the available data to preliminary target to make preliminary water quality impairment determinations. CDM's policy ensures that a document is not delivered until appropriate quality control has been performed. Hours are always set aside upfront for this important task. A top quality Phase I report was produced and delivered to BCD which allowed for the next phase of the process to begin. In summary, the following steps were taken when preparing the Beaverhead River Watershed Phase I Report:

- Upfront meetings with BCD and DEQ;
- Careful coordination of delegation of tasks within CDM and with subcontractors;
- Attending BCD meetings to present updates on project progress; and
- Assigned quality control/quality assurance.

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- Keeping the project costs within the budget
- Providing regular checks on project controls

Quality Management is First Priority

Our corporate mission requires commitment to project quality in all of our assignments. CDM's quality management program is our way of doing business — a structured approach to improvement based on client satisfaction. It is also used to measure whether we achieve our firm's improvement goals. Our quality management program is geared to improve:

- Quality of services
- Staff capability
- Health and safety
- Productivity

Thinking Globally, Acting Locally

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Gwen Pozega, P.E. *Project Manager, TMDL*

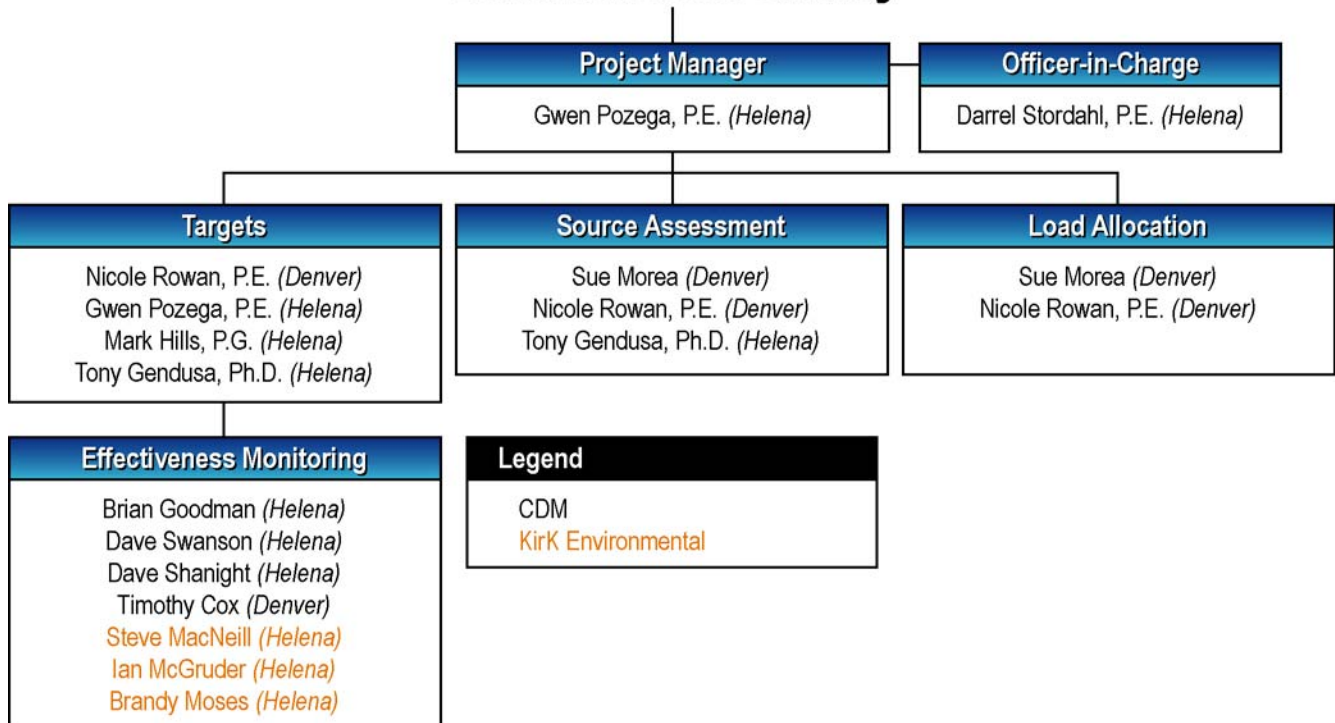
Ms. Pozega is an engineer with nine years of experience in the civil and environmental fields. Her experience includes planning for water and wastewater treatment

managers, storm drainage design, engineering oversight of construction, and inspections of wastewater treatment systems for optimizing operations.

When employed with Montana DEQ, Ms. Pozega provided project management and technical reviews of municipal wastewater treatment systems. Ms. Pozega provided review comments to municipalities in regard to the completeness of alternatives studied in planning documents and

Years of Experience: 9
Education: B.S. - Engineering Science, Montana College of Mineral Science and Technology
Registration: Professional Engineer: Montana

Montana Department of Environmental Quality



systems, designing water and wastewater treatment systems, reviewing plans and specifications, regulating and providing technical assistance to operators and

also in regard to the estimated design and construction costs of each alternative. Ms. Pozega prepared environmental assessments for local, county, state, and federal governments which was an important task of the review process. *She gained extensive knowledge of Montana state rules and regulations as an environmental engineer for DEQ.*

Darrel Stordahl, P.E.
Client Officer

Mr. Stordahl is an engineer with 17 years of experience in the engineering field.

Mr. Stordahl is currently the senior project manager for the C.R. Kendall Mine Post-Closure Environmental Impact Statement (EIS) project for the Montana DEQ. Mr. Stordahl is

currently working on the EIS *to ensure compliance with the Montana Environmental Policy Act (MEPA)* that is patterned after the National Environmental Policy Act (NEPA). The EIS is being utilized to identify reclamation and long-term water treatment alternatives for the closed gold mine located near Hilger, Montana.

Nicole Rowan, P.E.

TMDL Targets, Source Assessment, Load Allocation

Ms. Rowan is an environmental engineer with expertise in watershed water quality planning. She has extensive knowledge of various regulatory issues such as NPDES permitting, TMDL program, and industrial pretreatment programs.

Ms. Rowan has extensive experience in TMDL development for watersheds, lakes, and streams. She has reviewed 303(d) listings, assessed numeric targets for TMDL development, methodology development, TMDL calculation, allocation approaches and implementation strategies.

Sue Morea

Task Leader—Water Quality Adaptive Management Strategies

Ms. Morea has been involved in the analysis, planning, and report phases for a broad range of projects for the federal, state, municipal, and private sectors. Her experience has included watershed management, stormwater management, NPDES permitting, water

quality modeling, integrated resource management, Section 208 Area wide Water Quality Management Planning, RI/FS Superfund work, regulatory interpretation of the CWA, UAAs, and Safe Drinking Water Act (SDWA) compliance. She has worked extensively in Colorado, Montana, New Mexico, Kansas, Oklahoma, Arizona, California, and Texas negotiating NPDES permits for a variety of clients.

Years of Experience: 16
Education: M.S. – Environmental Engineering, Colorado State University
B.S. – Biology, University of Colorado

Ms. Morea is currently the technical director for the Arid West Water Quality Research Habitat Characterization Project. This project will identify biological, chemical, and physical characteristics at 10 locations in the southwest. zone model to project the mixing zone configuration of both discharges during regulatory low-flow conditions in the Kansas River.

Mark Hills, P.G.

TMDL Targets

Mr. Hills specializes in collecting and analyzing data for environmental characterization, and preparing and reviewing technical documents. He has directed and performed remedial actions at over 12 sites, of which 4 were on the NPL. Mr. Hills has also directed several groundwater exploration programs for municipal and industrial clients.

Mr. Hills has performed data management during compilation of data for use in risk assessment for the Butte Priority Soils RI/FS.

He led the team responsible for collecting and interpreting storm water data for the Stormwater Time Critical Removal Action (TCRA) at the Silver Bow Creek/Butte Area NPL site. During his fourteen-year career, Mr. Hills has directed environmental remediation studies for various federal clients including the EPA, Department of Defense, Department of Energy, U.S. Forest Service and Army Corps of Engineers. Currently, he manages two EPA Work Assignments.

Years of Experience: 18
Education: M.S., Hydrogeology, Mine & Mineral Waste Emphasis, Montana Tech of the University of Montana
B.S. Geology, Montana State University
Registration: Professional Geologist, Washington

Tony Gendusa, Ph.D.

TMDL Targets and Source Assessment

Dr. Gendusa's area of expertise includes aquatic ecology and biology, aquatic/ecotoxicology, aquatic habitat assessment, and ERA. More specifically, his area of expertise focuses on the potential impacts to aquatic and

terrestrial species, including threatened and endangered species, from a variety of ecological stressors including chemically contaminated water, sediment, soil, and biota.

At the New World Mining site in Montana Dr. Gendusa evaluated the magnitude and distribution of major contaminants, with emphasis on potential impacts to periphyton, fish, and macroinvertebrates. Chemical, physical, and biological data from several years of investigations were compiled and summarized to assess the degree of mining-related impairment onsite and adjacent to the site. Dr. Gendusa also provided expert testimony on the degree of stream impairment to the Montana Water Quality Board in Helena.

Years of Experience: 17
Education: B.S. – Soil and Water
Science, University of California at
Davis

At another Montana project, the Streamside Tailings Operable Unit - Silver Bow Creek, Dr. Gendusa evaluated the magnitude and distribution of major contaminants, with emphasis on potential impacts to periphyton, fish, and macroinvertebrates. Data were used to support NRDA investigation completion.

Brian Goodman **Hydrology**

Mr. Goodman has over 20 years experience as a hydrogeologist, resource development geologist, and environmental remediation and compliance specialist. He has direct project and technical expertise in numerous areas including: hydrogeologic characterization, subsurface geologic studies, and groundwater and surface water quality studies.

David Swanson **TMDL Effectiveness Monitoring**

Mr. Swanson has 22 years of experience. He has worked as a field team leader with CDM for the EPA Region 8 Tenmile and Basin Creek Watershed Evaluations. His responsibilities included stream and river flow measurements, abandoned mine evaluations and surveys, adit discharge, and waste rock sampling.

Mr. Swanson has substantial experience obtaining samples for investigations and compliance while at the Basin creek mine. Mr. Swanson supervised sampling of soils, groundwater, and surface water. In addition, Mr. Swanson, while maintaining strict adherence to SAPs, obtained soil, groundwater, and surface water samples for EOA on the Tenmile Creek, Basin Creek, and Town of Basin projects. Mr. Swanson also conducted field programs for asbestos sampling in Libby.

David Shanight **TMDL Effectiveness Monitoring**

Mr. Shanight specializes in providing technical support to CDM project managers and agency personnel. He has worked on a variety of NPL sites and on a number of abandoned mines located on state and federal property.

Years of Experience: 20
Education: M.Sc., Engineering,
Hydrology and Water Resources,
University of Arizona
B.Sc., Geological Sciences, University
of Texas at Austin

Mr. Shanight provided oversight for the EPA at the Anaconda Smelter Site. At the Upper Tenmile Creek project, Mr. Shanight served as field team leader for investigation of a mountainous watershed site contaminated by arsenic, cadmium, copper, lead, mercury, and zinc. He led sampling of mine wastes, soils, surface water, sediment, and groundwater.

Years of Experience: 22
Education: 2 years of Mechanical
Engineering and Drafting, Portland
Regional Technical Center

Steve MacNeill **TMDL Effectiveness Monitoring**

Mr. MacNeill has 17 years of experience performing and managing environmental and hazardous waste site investigations. His responsibilities include both the field work and management aspects of soils and wetlands related projects, phase I and phase II ESAs, RI, FS, and preliminary assessments. His field work experience includes soil characterization and wetlands delineation; chemical, physical, and biological assessment of impacted surface water bodies; geophysical investigations; environmental sample collection; and installation of groundwater monitoring wells.

Mr. MacNeill completed an expanded engineering evaluation and cost analysis evaluating reclamation alternatives for the Alta Mine site near Helena.

Alternatives for reclamation being evaluated included excavation of the waste rock and disposal in a modified RCRA repository and reconstruction of the original drainage. Also being considered were alternatives that will allow for the capture and diversion of groundwater discharge from the shaft, recontouring of the waste rock, and revegetation of the site.

Years of Experience: 5
Education: B.S., Abused Land
Rehabilitation, Montana State
University

Ian Magruder

TMDL Effectiveness Monitoring

Mr. Magruder's background includes geology and geochemistry and has solid experience in hydrological/hydrogeological processes. He has been involved with and organized many basin-scale water resource investigations where his responsibilities have included water quality sampling, field chemistry, flow measurement, surface-groundwater interactions, research and retrieval of archived data, data analysis, and GIS spatial analysis and modeling.

He performed a basin-scale water resource investigation of the Ruby Valley, Montana and physical and chemical assessment of tributaries to the Clark Fork River, Deer Lodge Valley, Montana. His field duties include organization of surface water and groundwater well water level monitoring network, collection of water quality samples and field chemistry, flow measurement of surface water, physical assessment, data analysis and presentation of field data, GIS spatial analysis and map production.

Years of Experience: 10
Education: Ph. D. candidate -
Engineering Science, University of
Auckland, New Zealand

M. Phil. - Science and Technology,
University of Waikato, Hamilton, New
Zealand

M.S. - Environmental and Water
Resources Engineering, University of
Colorado

B.S. - Civil and Environmental
Engineering, Duke University

Brandy Moses

TMDL Effectiveness Monitoring

Ms. Moses' experience includes rangeland (upland and riparian) conservation planning and management. She was involved with over 15 landowners in the East Deer Lodge Valley Clark Fork Priority Area working to establish sound management practices and monitoring techniques for rangeland stability.

Ms. Moses also has experience in EPA 319 grant preparation and phase I TMDL reporting and development. She has completed diverse training courses by the EPA, NRCS, and private entities for understanding natural resource dynamics and evaluating the health of both upland and riparian-wetland areas. Throughout her trainings, Ms. Moses has also gained proficiency in GIS and mapping (ArcView 3.3 and 8.3). She has been involved in conservation and plan mapping in the Clark Fork and watershed assessment mapping (land cover, ownership, soils, sampling sites, geology, etc.) for the

Years of Experience: 6
Education: B.A. - Geology with High
Honors, University of Montana

Boulder River, Ruby River, Gold Creek, and the East Deer Lodge Valley TMDL efforts.

Timothy Cox, TMDL Effectiveness Modeling

Mr. Cox specializes in water resources engineering and water quality and quantity modeling. He has extensive experience in the development and maintenance of surface water quality and quantity computer models, as well as the application of many published models. Mr. Cox is also very experienced in stream ecosystem modeling, water quality and ecology field/ laboratory research, and engineering software development.

Mr. Cox's work at CDM has focused mainly on computer modeling of surface waters, with respect to both quantity and quality. Mr. Cox was the lead surface water quality modeler and a lead field sampling engineer for the total maximum daily load (TMDL) analysis for the City of Stillwater, Oklahoma. Mr. Cox also helped develop and apply a stochastic approach to stormwater modeling, with respect to both quantity and quality, for the Butte hillside former mining site in Butte, Montana. He was the primary modeler of contaminant fate and transport using the EPA's WASP model for the Ten Mile Creek (MO) superfund site RI/FS study. Other surface water projects have included HEC-RAS channel hydraulic modeling, WMM nonpoint runoff modeling, and large-scale river basin and reservoir water balance modeling.

Years of Experience: 4
Education: B.S., Human Biology
Stanford University
Arctic Biology and Geology, University of
Iceland

Team Member / Role	Degrees	Registrations	Years of Experience	Years of Similar Project Experience	Specialty Training / Experience
Gwen Pozega Project Manager	B.S. – engineering Science, Montana College of Mineral Science and Technology	Professional Engineer: Montana	9	9	Hazardous Waste Training, Advanced Water Pollution Control: Biological Wastewater Treatment. Former DEQ project manager. Experience in water quality studies and investigations. Extensive knowledge of DEQ regulations. Currently managing TMDL project.
Darrel Stordahl Client Officer	M.S. - Environmental Engineering, Montana College of Mineral Science and Technology B.S. Mining Engineering, Montana College of Mineral Science and Technology	Professional Engineer: Montana	17	17	Environmental engineer 17 years of experience in the engineering field. Mr. Stordahl is currently the senior project manager for the CR Kendall Mine Post-Closure Environmental Impact Statement (EIS) project for the Montana Department of Environmental Quality (DEQ). Mr. Stordahl is currently working on the EIS to ensure compliance with the Montana Environmental Policy Act (MEPA) that is patterned after the National Environmental Policy Act (NEPA). The EIS is being utilized to identify reclamation and long-term water treatment alternatives for the closed gold mine located near Hilger, Montana.
Nicole Rowan Targets, Source Assessment, Load Allocation	B.S. – Biological Systems Engineering, University of Nebraska-Lincoln	Professional Engineer: Kansas, Colorado	9	9	Extensive knowledge of various regulatory issues such as TMDLs and NPDES permitting. Currently managing TMDL development for eight watersheds in Southern Illinois.
Sue Morea Targets, Source Assessment, Load Allocation	M.S. – Environmental Engineering, Colorado State University B.S. – Biology, University of Colorado	n/a	16	16	CDM's water resource practice leader for the western United States. American Consulting Engineer's Council (ACEC) National Engineering Excellence Award for the Passive Treatment System Pilot Plant at the Clear Creek/Central City Superfund Site.
Mark Hills Targets	M.S. – Hydrogeology, Mine & Mineral Waste Emphasis, Montana Tech of the University of Montana B.S. – Geology, Montana State University	Professional Geologist: Washington	18	18	Specializes in the performance of remedial investigations and feasibility studies (RI/FS), collecting and analyzing data for environmental characterization, and preparing and reviewing technical documents.
Tony Gendusa Targets	Ph.D. – Ecology, University of North Texas M.S. – Medical Technology, California State University B.S. – Biological Sciences, California State University	n/a	31	31	Attended the U.S. Army Corps of Engineers-approved 40-hour training for certified wetlands specialist (1997). Currently awaiting USACE testing and certification procedures to be completed. Attended OSHA 40 Health and Safety Training (1992) with annual updates. Attended EPA Three-day Risk Assessment Workshop.
Brian Goodman Effectiveness Monitoring	M.Sc. – Engineering, Hydrology and Water Resources, University of Arizona B.Sc. – Geological Sciences, University of Texas at Austin	Qualified Site Assessor, Alaska DEQ	20	20	Currently serving as project hydrogeologist for numerous projects in Montana and has technical expertise in Montana hydrogeologic characterization. Conducted regulatory and public meetings for the voluntary cleanup of the former railroad refueling state Superfund site in Deer Lodge, Montana.

Team Member / Role	Degrees	Registrations	Years of Experience	Years of Similar Project Experience	Specialty Training / Experience
David Swanson Effectiveness Monitoring	Mechanical Engineering and Drafting, Portland Regional Technical Center	n/a	22	22	MSHA First Aid and Mine Rescue Training. OSHA 40-Hour Hazardous Material Training, Portable Nuclear Gauge Operations & Safety Training, and State of Montana Firefighting and Fire Rescue Training.
David Shanight Effectiveness Monitoring	B.S. – Abused Land Rehabilitation, Montana State University	n/a	5	5	Provided oversight for the EPA and delineated the extent of aerial contamination from over 100 years of ore processing operations and large quantities of wastes with elevated concentrations of arsenic and metals such as copper, cadmium, lead, and zinc.
Steve MacNeill Effectiveness Monitoring	B.S. – Soil and Water Science, University of California at Davis	n/a	17	17	Mr. MacNeill completed a course put on by the NRCS that provided training in evaluating the health of riparian-wetland areas.
Ian Magruder	B.A. – Geology, University of Montana	n/a	6	6	ArcView GIS application to map production and spatial data analysis for providing information and insights into projects (vegetation, soils, and use, DOQs, project plans, ownership, water rights, riparian polygons, etc.). Also, application of GIS and biogeochemical process modeling of basin groundwater systems and soil properties.
Brandy Moses Effectiveness Monitoring	B.S., Human Biology (Education and Environmental Biology), Stanford University	n/a	4	4	NRCS Training, Proper Functioning Condition Riparian-Wetland Areas, 2002 Hansen Lotic Wetland Health Assessment Training, Green Zone Riparian Assessment Monitoring the Vegetative Resources in Riparian Areas Upland Monitoring and Similarity Index Training, NRCS GIS, ArcView, and Toolkit training, Neal Svenson and NRCS,
Timothy Cox Effectiveness Monitoring	Ph. D. candidate - Engineering Science, University of Auckland, New Zealand M. Phil. - Science and Technology, University of Waikato, Hamilton, New Zealand M.S. - Environmental and Water Resources Engineering, University of Colorado B.S. - Civil and Environmental Engineering, Duke University	n/a	10	10	Principal developer of Airport Deicing Management Model (ADMM) with extensive applications. Helped maintain and develop <i>RiverWare</i> , a decision support model for large-scale reach and reservoir management, while a graduate research assistant at CADSWES

